

Westmorland County Council.

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**ANNUAL REPORT**

OF THE

**Medical Officer of Health**

**WILLIAM E. HENDERSON, M.A., M.B., Ch.B., D.P.H.,**

**County Medical Officer of Health.**



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**THE YEAR 1914.**

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Atkinson & Pollitt, Printers, Kendal.





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REPORT  
10 JUL 1915

OF THE

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Table A : Showing Deaths in each District of the County classified according to diseases.

Table B : Showing number of cases of infectious disease notified in each District in the County, and the number of cases removed to Isolation Hospitals.

# COUNTY OF WESTMORLAND.

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## Public Health and Housing Committee of the County Council.

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Chairman : MR. J. C. HAMILTON.  
MESSRS. J. W. WESTON, M.P.,  
G. M. BECK,  
F. W. CREWDSON,  
R. W. DENT,  
J. G. GANDY,  
G. GILKES,  
R. P. HUNTER,  
H. P. MASON,  
A. J. MACCALLUM,  
W. H. MUSGROVE,  
W. S. PAGET-TOMLINSON,  
J. PARKIN,  
G. H. PATTINSON,  
J. A. PATTINSON,  
D. J. PENNINGTON,  
H. A. T. SHEPHERD,  
ED. THOMPSON,  
R. B. THOMPSON,  
S. WOOD.

## District Medical Officers of Health.

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<i>Name.</i>			<i>Urban Districts.</i>
W. BARON COCKILL, M.D., D.P.H.			... AMBLESIDE
”	”	”	... APPLEBY
”	”	”	... GRASMERE
”	”	”	... KENDAL
”	”	”	... SHAP
”	”	”	... WINDER-
			MERE
T. G. MATHEWS, M.D., Edin.	...		... KIRKBY
			LONSDALE
			<i>Rural Districts.</i>
W. BARON COCKILL, M.D., D.P.H.			... EAST WEST-
			MORLAND.
”	”	”	... SOUTH WEST-
			MORLAND.
”	”	”	... WEST WARD.

Gentlemen,

I have the honour to submit my Fourth Annual Report, which deals with the Calendar Year 1914.

## Main Features of the Year's Work.

On the outbreak of war Lieut.-Colonel Cockill, T.D., R.A.M.C. (T.F.), the Medical Officer of Health for the Westmorland Combined Districts, was called up for military duty. With the sanction of the County Council I undertook to supervise the work in the Combined Districts. To this end I was appointed Deputy Medical Officer of Health for the Westmorland Combined Districts. Dr. Cockill secured the services of Dr. W. M. MacIlraith as temporary assistant Medical Officer of Health. Dr. MacIlraith acted in this capacity from October 23rd, 1914, to January 30th, 1915.

Colonel Cockill was Officer in charge of No. 1 Ambulance Train until November 13th, 1914. Since that date he has been stationed in Kendal training a R.A.M.C. Casualty Clearing Station Unit. During this latter period he has most kindly devoted his spare time to Public Health work, and by 22nd March, 1915, his Annual Reports for the various Districts were to hand. Under such abnormal circumstances Colonel Cockill is to be congratulated on the prompt manner in which he has furnished his nine annual Reports.

Although the Kirkby Lonsdale Urban District Health Authority entered into the Westmorland Combined Districts when Colonel Cockill was appointed the Medical Officer of Health, Dr. T. G. Mathews, the former Medical Officer of Health for Kirkby Lonsdale, very kindly consented to continue in office during the period of the war. I am deeply indebted to Dr. Mathews for his ready offer to carry on.

A considerable number of troops have been billeted in Kendal. Their health has been excellent. Close and constant co-operation

has obtained between the Military Medical Officers and the Public Health Service as suggested by several memoranda issued by the Local Government Board. A welcome visit of inspection as to billeting arrangements was paid by Dr. Macewen of the Local Government Board.

A systematic visitation of the midwives practising in the Administrative County was carried out by myself. A special report thereon will be found on pages 50 and 51.

A survey of persons likely to come within the meaning of the Mental Deficiency Act, 1913, is proceeding. More urgent work in view of the situation created by the war has delayed the completion of this survey.

Under the County Sanatorium Benefit Scheme much useful work has been done in 1914. This is in large measure due to the zeal and thoroughness of Dr. C. F. Walker, the County Tuberculosis Officer.

## **Administrative County of Westmorland.**

### **AREA.**

The Administrative County of Westmorland has an area of 505,330 statute acres (land and inland water), of which 31,497 are Urban and 473,833 are Rural. There are 7 Urban and 3 Rural Districts.

### **BOUNDARIES.**

Westmorland marches with Cumberland on the N.W., Lancashire on the S. and S.W., Yorkshire on the E., and a small part of Durham on the extreme N.E. Its length from N.E. to S.W. is 42 miles, while from E. to W. it measures 40 miles.

The Pennine Range forms its eastern frontier, while the principal chain of the Cumbrian mountains forms its north-western barrier from Helvellyn to Bowfell. Windermere Lake, Grasmere Lake, Rydal Water, Haweswater, etc., are wholly within the County, which also includes part of Ullswater.



## GEOLOGICAL FEATURES.

Almost the whole County is more or less mountainous, the highest country being to the N.W. in the district covered by the Volcanic Rocks of the Borrowdale series. To the S. and S.E. of this district there is a stretch of country generally characterised by lower elevations and more rounded contours which is occupied by Silurian rocks (slates and flags), while south of this there is a somewhat broken belt of carboniferous limestone. Two other belts of carboniferous limestone occur in the County, one running S.E. from the river Eamont to Mallerstang and the other forming the western escarpment of the Pennines and joining the former beyond Kirkby Stephen. Between these two belts lies the Eden Valley, a broad expanse of fairly level country, floored by new red sandstone rocks. Much of the country occupied by the older rocks consists of high moorland, with thin soil and with only sparse population, though the extensive valleys and the lower lying districts to the south of the County, which are generally covered with glacial drift, or near the sea with alluvium, are more thickly peopled.

## Vital Statistics.

### SUMMARY OF VITAL STATISTICS.

	1911.	1912.	1913.	1914.
*Birth Rate	19.6	20.36	18.18	<b>17.63</b>
†Infantile Mortality Rate	84.6	69.5	107	<b>67</b>
*Crude Death Rate	13.10	12.15	13.41	<b>11.97</b>
*Phthisis Death Rate	0.81	0.55	0.58	<b>0.44</b>
*Cancer Death Rate	1.07	1.25	1.38	<b>1.24</b>

\*Rates calculated per 1000 living.

†Rates calculated per 1000 registered births.



### POPULATION.

In the following Table the population of the Administrative County, as estimated by the District Medical Officers of Health, is set out and compared with the figures contained in the 1911 Census Returns :—

DISTRICT.	Area in Acres: (Land and Inland Water).	POPULATION.	
		1911 Census.	1914. Estimated by District M.O.H.
URBAN.			
Ambleside ...	4,424	2,553	2,553
Appleby .. ...	1,876	1,736	1,736
Grasmere ...	7,332	876	876
Kendal ... ...	2,622	14,033	14,033
Kirkby Lonsdale	3,254	1,524	1,500
Shap ... ...	2,082	1,006	1,006
Windermere ...	9,907	5,147	5,147
RURAL.			
East Westmorland	183,154	11,151	11,151
South Westmorland	170,810	19,116	19,116
West Ward ...	119,869	6,433	6,433
Totals ...	505,330	63,575	63,551

It will be seen that the District Medical Officers of Health estimate the population of the County in 1914 as 63,551. The statistics contained in the following Tables are, of necessity, calculated on the same basis.

The Registrar-General estimates the population of the County in 1914 as 63,365, and calculates the various Birth and Mortality Rates on this basis. Thus it will be apparent that the Rates given in the following Tables will slightly differ from those of the Registrar-General.

The following table gives the Birth Rates, the Recorded Annual Death Rates per 1,000 from all causes, and from the several Epidemic Diseases during the year 1914.

	ANNUAL RATES PER 1,000 LIVING.										
	Births.	DEATHS.		Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping Cough.	Diph- theria.	Diarrhoea and Enteritis (under two years).	Deaths under one year per 1,000 Births.
		Crude.	Cor- rected.								
	I	2	3	4	5	6	7	8	9	10	11
England and Wales	23·8	14·0	13·6	0·05	0·00	0·24	0·08	0·21	0·15	20·41	105
97 Great Towns ...	24·9	14·6	14·9	0·04	0·00	0·35	0·09	0·25	0·16	26·09	113
145 Smaller Towns	23·6	12·8	12·9	0·05	0·00	0·21	0·07	0·18	0·16	19·84	104
England and Wales (Rural)	21·9	13·3	12·2	0·05	0·00	0·12	0·06	0·17	0·14	12·64	93
Westmorland ...	17·63	11·97	10·73	0·00	0·00	0·00	0·00	0·21	0·03	0·02	72



## Birth Rate.

BIRTH RATE PER 1,000 POPULATION.

DISTRICT.	No. of Births 1914	Birth Rate 1914	Birth Rate 1913.	Birth Rate 1912	Birth Rate 1911
URBAN.					
Ambleside ... ..	29	11·35	14·8	12·92	14·8
Appleby ... ..	39	22·46	23·61	16·12	24·7
Grasmere ... ..	16	18·26	10·26	23·97	11·4
Kendal ... ..	294	20·95	20·73	22·73	21·1
Kirkby Lonsdale ...	23	15·3	15·3	15·3	17·6
Shap ... ..	23	22·89	23·89	20·87	17·9
Windermere ... ..	76	14·76	13·98	18·84	17·8
RURAL.					
East Westmorland	224	20·08	21·15	24·21	20·9
South Westmorland	291	15·26	15·32	18·83	18·7
West Ward ... ..	106	16·32	18·49	18·34	21·1
<b>Westmorland ...</b>	<b>1121</b>	<b>17·63</b>	<b>18·18</b>	<b>20·36</b>	<b>19·6</b>
England and Wales (Rural)		21·9	23·3	22·5	23·4

What the progressive fall in the County birth rate means is seen when we compare the total births in the County during the last 3 years :—

Year	...	1912	1913	1914
Births	...	1,295	1,156	1,121

In 1914, 1,121 births were registered, whereas, could the County claim to have a birth-rate even equal to the declining birth-rate of England and Wales, there would have been 1,477 babies

born in Westmorland in 1914. We are by 356 babies behind the average for England and Wales. It has, however, to be observed that in comparing localities the crude birth rate (number of living children born annually per 1,000 of the population) is not a satisfactory measure of fertility. This is so because several factors influence the birth rate besides the deliberate restriction of the family,—such factors as the age and sex distribution of the population, the marriage rate, the abstention from, or postponement of, marriage, illegitimacy, emigration.

For instance, the proportion per cent. of married women in the female population aged 15-45 years was, in 1911:—

England and Wales.	Westmorland.
47.7	38.4

Even so, the fact remains that in England and Wales for every 1,000 married women aged 15-45 years there were 196.2 births in 1911, while in Westmorland for every 1,000 married women aged 15-45 years, there were 192.7 births.

Allowing for all disturbing factors, we have to face the fact that the Westmorland fertility rate is below that of England and Wales. When we consider that the open country is the natural environment of the young of the human race, and when we remember the truly splendid specimens of children to be found in our county schools, can we do less than deplore the falling birth rate in Westmorland?

Dr. Stevenson says, in the Registrar-General's Annual Report for 1912: "If the fertility of married women in proportion to their numbers had been as high in 1912 as in 1876-80, the legitimate births would have numbered 1,290,480 instead of 835,209 actually recorded, giving a legitimate birth rate of 35.2."

Commenting on these figures Dr. Brend\* remarks "a loss of more than 400,000 infant lives every year from one disease alone would lead to the most stupendous national efforts being made to check it. To compensate for this loss, the effects of infant clinics and schools for mothers are like saving a boat load from a sinking liner."

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\*"Nineteenth Century and After," March, 1915.



## Death Rate.

CRUDE DEATH RATE PER 1,000 POPULATION.

DISTRICT.	No. of Deaths 1914	Death Rate in 1914.	Death Rate 1913	Death Rate 1912.	Death Rate 1911
URBAN.					
Ambleside ... ..	40	15·66	9·01	12·92	9·39
Appleby ... ..	16	9·27	11·52	9·27	12·67
Grasmere ... ..	10	11·41	7·98	11·41	12·55
Kendal ... ..	177	12·61	15·67	13·32	15·60
Kirkby Lonsdale ...	24	16·00	10·00	5·30	11·81
Shap ... ..	16	15·9	13·91	12·92	8·94
Windermere ... ..	58	11·26	14·57	11·26	10·68
RURAL.					
East Westmorland	139	12·45	14·91	12·64	13·72
South Westmorland	189	9·88	11·35	10·92	12·60
West Ward ... ..	92	14·29	14·76	15·23	12·59
<b>Westmorland ...</b>	<b>761</b>	<b>11·97</b>	<b>13·41</b>	<b>12·15</b>	<b>13·10</b>
England and Wales (Rural)		13·30	13·1	12·90	13·9

The CORRECTED death rate for Westmorland for 1914 was 10·73 per 1,000 of the population. By "corrected" is meant that the Death Rate is raised or lowered (lowered in the case of Westmorland) to the figure it would be if the age and sex distribution of the County were the same as that of England and Wales generally.

## DEATHS OF INFANTS UNDER ONE YEAR.

DISTRICT.	No. of Deaths under 1 year in 1914.	Infant Death Rate per 1000 Births in 1914.	Infant Death Rate per 1,000 Births in 1913.	Infant Death Rate per 1,000 Births in 1912.	Infant Death Rate per 1,000 Births in 1911.
URBAN.					
Ambleside ... ..	1	34	105	30·3	52·6
Appleby .. ..	7	179	48	0·0	93·0
Grasmere ... ..	0	0	0	47·6	0·0
Kendal ... ..	18	61	158	78·3	107·6
Kirkby Lonsdale ...	1	43	0	86·9	115·4
Shap ... ..	2	83	125	47·6	55·0
Windermere ... ..	6	78	13	61·8	32·6
RURAL.					
East Westmorland	21	93	101	77·0	89·7
South Westmorland	11	37	82	47·2	81·0
West Ward ... ..	9	85	159	135·6	80·0
<b>Westmorland</b> ...	<b>76</b>	<b>67</b>	<b>107</b>	<b>69·5</b>	<b>84·6</b>
England and Wales (Rural) ...		93	96	86·0	88·0



The following is an analysis of the causes of the deaths of infants :—

DEATHS OF INFANTS UNDER ONE YEAR IN EACH DISTRICT CLASSIFIED  
ACCORDING TO DISEASES.

DISTRICT.	Whooping Cough	Bronchitis	Pneumonia (all forms)	Gastritis.	Congenital Malformations.	Premature Birth	Atrophy, Debility, and Marasmus.	Convulsions.	Enteritis.	Other Causes.	TOTALS
URBAN.											
Ambleside ...	-	-	-	-	-	1	-	-	-	-	1
Appleby ...	1	-	-	-	-	4	-	-	-	2	7
Grasmere ...	-	-	-	-	-	-	-	-	-	-	-
Kendal ...	1	5	1	1	3	5	1	-	-	1	18
Kirkby Lonsdale	-	-	-	-	-	-	-	-	-	1	1
Shap ..	1	-	-	1	-	-	-	-	-	-	2
Windermere ..	-	1	-	-	-	3	-	1	-	1	6
RURAL.											
East Westmorland	5	-	-	-	-	8	-	2	1	5	21
South Westmorland	-	1	1	-	-	5	-	1	-	3	11
West Ward ...	-	4	-	1	1	2	-	-	-	1	9
TOTALS	8	11	2	3	4	28	1	4	1	14	76

## CANCER DEATH RATES.

DISTRICT.	No. of Deaths in 1914.	Rates per 1000 in 1914.	Rates per 1000 in 1913.	Rates per 1000 in 1912.	Rates per 1000 in 1911.
URBAN.					
Ambleside ...	3	1·17	0·78	2·35	0·78
Appleby ...	1	0·57	—	2·88	3·45
Grasmere ...	1	1·14	—	2·28	—
Kendal ...	18	1·28	1·21	0·85	1·35
Kirkby Lonsdale	2	1·33	1·31	0·66	—
Shap ...	1	0·99	1·98	1·98	0·90
Windermere ...	7	1·35	2·33	1·35	1·77
RURAL.					
East Westmorland	14	1·25	1·61	1·34	0·62
South Westmorland	19	0·99	1·46	1·04	0·99
West Ward ...	13	2·01	1·08	1·55	1·55
<b>Westmorland</b>	<b>79</b>	<b>1·24</b>	<b>1·38</b>	<b>1·25</b>	<b>1·07</b>



## TUBERCULOSIS DEATH RATES.

DISTRICT.	PULMONARY.					NON-PULMONARY.				
	No. of Deaths 1914.	Mortality per 1000 1914.	Mortality per 1000 1913.	Mortality per 1000 1912.	Mortality per 1000 1911.	No. of Deaths 1914.	Mortality per 1000 1914.	Mortality per 1000 1913.	Mortality per 1000 1912.	Mortality per 1000 1911.
URBAN.										
Ambleside ...	2	0·78	·39	·77	2·40	1	0·39	—	—	—
Appleby ...	—	—	·57	·57	—	—	—	—	—	—
Grasmere ...	1	1·14	1 14	—	1·13	—	—	—	—	—
Kendal ...	8	0·57	·57	·85	1·14	3	0·21	·56	·49	·64
Kirkby Lonsdale ...	2	1·33	·65	—	·66	—	—	—	—	—
Shap ...	2	1·98	·99	—	—	—	—	—	—	—
Windermere ...	—	—	·58	·97	·38	—	—	·58	·19	·19
RURAL.										
East Westmorland...	3	0·26	·44	·54	·62	—	—	·17	·08	·08
South Westmorland	6	0·31	·68	·36	·73	8	0·41	·15	·20	·20
West Ward ...	4	0·62	·46	·31	·76	—	—	—	·46	·46
Westmorland ...	28	0·44	·58	·55	·81	12	·18	·25	·25	·28
England & Wales ... (Rural)	—	—	·74	·77	·82	—	—	—	—	—

## Infectious Disease.

In his Annual Report for 1914 on " Statistics of the incidence of Notifiable Infectious Diseases " the Chief Medical Officer of the Local Government Board presents valuable data which help us to realise how this County compares with other areas in respect of the incidence of diseases.

In the attached Table the sickness rates for Westmorland are set out and compared with other areas :—



## Sickness Rates per 1,000 of the Population.

Disease	Year.	England and Wales (including ports).	England.	London.	English Administrative Counties (excluding London).	Rural Districts of England.	Westmorland.
Scarlet Fever ...	1912	2.98	2.95	2.57	2.77	2.47	2.77
	1913	3.58	3.51	3.89	2.96	2.61	1.78
	1914	4.47	4.38	5.54	3.87	3.45	1.88
Diphtheria ...	1912	1.24	1.24	1.57	1.10	1.00	1.70
	1913	1.39	1.39	1.70	1.26	1.03	1.91
	1914	1.61	1.60	2.02	1.53	1.32	1.36
Enteric Fever ...	1912	0.23	0.23	0.16	0.22	0.18	0.03
	1913	0.23	0.22	0.17	0.22	0.18	0.08
	1914	0.24	0.23	0.17	0.23	0.20	0.21
Puerperal Fever	1912	0.06	0.06	0.08	0.05	0.04	0.00
	1913	0.05	0.05	0.08	0.04	0.03	0.03
	1914	0.06	0.06	0.09	0.05	0.04	0.05
Erysipelas ...	1912	0.63	0.65	0.91	0.53	0.45	0.52
	1913	0.63	0.64	0.92	0.52	0.43	0.71
	1914	0.73	0.74	1.10	0.59	0.47	0.66
Cerebro-spinal Fever	1913	0.01	0.01	0.02	0.01	0.01	0.03
	1914	0.01	0.01	0.02	0.01	0.01	0.00
Poliomyelitis ...	1913	0.02	0.02	0.03	0.02	0.01	0.15
	1914	0.01	0.01	0.02	0.01	0.01	0.01

# Estimate for 1900

Description		Quantity		Unit Price		Total	
Excavation		1000		1.00		1000.00	
Foundation		200		5.00		1000.00	
Masonry		100		10.00		1000.00	
Roofing		50		20.00		1000.00	
Painting		100		10.00		1000.00	
Plumbing		50		20.00		1000.00	
Electricity		100		10.00		1000.00	
Scaffolding		100		10.00		1000.00	
Transportation		100		10.00		1000.00	
Labor		1000		1.00		1000.00	
Materials		1000		1.00		1000.00	
Tools		100		10.00		1000.00	
Permits		100		10.00		1000.00	
Insurance		100		10.00		1000.00	
Contingency		100		10.00		1000.00	
Total		10000		1.00		10000.00	

Notifications of Infectious Disease and Attack-Rates, in the Sanitary Districts of Westmorland  
for the 52 weeks ended 2nd January, 1915.

AREA.	Scarlet Fever.		Diphtheria.		Enteric Fever.		Puerperal Fever.		Erysipelas.	
	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.
<b>Urban Districts—</b>										
Ambleside	4	1·56	1	0·39	2	0·78	0	0·00	2	0·78
Appleby	19	10·99	5	2·89	0	0·00	0	0·00	0	0·00
Grasmere	0	0·00	1	1·11	0	0·00	0	0·00	0	0·00
Kendal	17	1·21	10	0·71	5	0·36	1	0·07	20	1·43
Kirkby Lonsdale	0	0·00	0	0·00	0	0·00	0	0·00	0	0·00
Shap	0	0·00	6	6·31	1	1·05	0	0·00	0	0·00
Windermere	1	0·19	7	1·35	0	0·00	0	0·00	0	0·00
<b>Rural Districts—</b>										
East Westmorland	43	3·88	4	0·36	3	0·27	1	0·09	5	0·45
South Westmorland	33	1·73	40	2·10	1	0·05	0	0·00	13	0·68
West Ward	2	0·31	12	1·87	1	0·16	1	0·16	2	0·31
<b>Total</b>	<b>119</b>	<b>1·88</b>	<b>86</b>	<b>1·36</b>	<b>13</b>	<b>0·21</b>	<b>3</b>	<b>0·05</b>	<b>42</b>	<b>0·66</b>



On Table B (see appendix) will be found an analysis of the various infectious diseases notified in the various Districts during 1914, together with the number of cases removed to Isolation Hospitals.

#### SCARLET FEVER.

From the Table mentioned above, it will be seen that a large proportion—93 out of a total of 121—of the patients were treated in the various Isolation Hospitals.

The following extracts from the District Reports deal with Scarlet Fever.

##### APPLEBY.

The Medical Officer of Health says :—“ During the latter part of the year an outbreak of Scarlet Fever occurred, twenty cases being notified. It began through an outside infection from visitors, and was characterised by a fairly regular succession of cases one after another, clearly showing that its spread was due to direct contact. The milk supplies were carefully noted, but were above suspicion. The fact that mumps were very prevalent at the time may have caused some confusion, so that swollen glands in the neck, due to scarletinal infection, were thought to be mumps, and so medical assistance was not brought and accurate diagnosis reached. Nineteen of these cases were removed to Isolation Hospital.”

##### EAST WESTMORLAND.

The Medical Officer of Health reports that “ an epidemic of scarlet fever occurred chiefly in the neighbourhoods of Soulby, Nateby, and Dufton, in the latter months of the year. Forty-three cases were reported in the District, 33 of which were removed to Ormside Hospital.”

##### SOUTH WESTMORLAND.

“ Scarlet fever,” says the Medical Officer of Health, “ shows a slight increase, there being 34 notified, as against 29 in the previous year. They have been distributed chiefly over the more southern portion of the area; 22 of these cases were removed to Hospital for isolation.”

The total number of cases of Scarlet Fever notified in the County during 1914 was 121, as against 108 in 1913, showing an increase of 13 cases. The number notified in 1913 was very low, however. During the last 4 years—1911-1914 inclusive—557 cases of scarlet fever have been notified, giving an average during this period of 139 cases per annum.

**DIPHTHERIA.****GRASMERE.**

“Only one case (of infectious disease) was notified, that being Diphtheria. It was isolated in Hospital. This did not arise in Grasmere itself,” adds the Medical Officer of Health, “but occurred in a visitor, who had already been infected before arrival.”

**KENDAL.**

“Of the 10 cases of Diphtheria, 9 were treated in the Sanatorium. They were spread uniformly over ten months, but two fatal cases occurred in February and March.”

**SOUTH WESTMORLAND.**

“Diphtheria was present in this District as an epidemic in and about Langdale at the close of 1913. For the next two months it continued unabated, and 29 cases were recorded. After the end of February it ceased. Since that date there have only been 15 cases reported in the whole District, which is satisfactory compared with what had been happening during the previous six months. The total notified cases of Diphtheria was less than in 1913, being 44 as against 53.”

The total number of cases of Diphtheria notified in the County during 1914 was 93, as against 131 in 1913, showing a decrease of 38 cases. During the last 4 years—1911-1914 inclusive—404 cases have been notified, giving an average during this period of 101 cases per annum.

**ENTERIC FEVER.****AMBLESIDE.**

The Medical Officer of Health says “there were two cases of enteric fever; in one case the disease was probably contracted away. The cause of the other could not be traced. There does not seem to be any connection between this case and any other that has occurred in the district during the last 16 years.”

**KENDAL.**

As the Medical Officer of Health remarks, “the return of a few cases of enteric fever is not satisfactory: there were six such cases.” One of the cases was fatal. “Of the remaining five, three occurred in one household: the general housing conditions were so bad that a closing order was made for this house and some neighbouring ones. In addition to this, the householder did not

help to make things any more sanitary. Another case developed the disease in the County Hospital, amid surroundings which almost negative the possibility of any local infection. No cause could be found for the other case: the housing and sanitary conditions were quite good: the only addition that might have been beneficial was the addition of more light. Except for the fatal case, all the others were of a very mild type and would probably have been overlooked, except for positive Widal reactions having been obtained."

SHAP.

"There was one case of enteric fever; the cause of the disease could not be ascertained," says the Medical Officer of Health.

SOUTH WESTMORLAND.

The Medical Officer of Health says "there have been two cases of typhoid fever, one of which was an imported case. Neither were fatal cases.

The total number of cases of Enteric Fever notified in the County during 1914 was 15. Last year four cases, in 1912 one case, and in 1911 22 cases were notified, making a total of 42 cases in four years, or an average during this period of 10.5 cases per annum.

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Of the remaining cases of notifiable infectious disease (excluding Tuberculosis), there was one case of poliomyelitis notified from South Westmorland; 44 cases of Erysipelas—including 21 from Kendal; four cases of Ophthalmia Neonatorum; and three cases of Puerperal Fever—one each from Kendal, South Westmorland and the West Ward.

### CONTROL OF TUBERCULOSIS.

During 1914, 28 persons died of pulmonary tuberculosis, while 103 were notified as suffering from this disease.

The Board's Medical Officer indicates † that the ratio of notifications to deaths provides an index of how the methods for the control of tuberculosis are working in an area. The ratio in Westmorland is high compared with the average for 59 administrative Counties.

The County death-rate from pulmonary tuberculosis continues to fall. The Westmorland standardised death-rate from this disease is the third lowest among the counties of England and Wales as regards deaths of females and tenth lowest as regards males.

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† Report of the Medical Officer of Local Government Board, 1913-14.



### THE COUNTY SANATORIUM BENEFIT SCHEME.

A full account of the Westmorland methods appeared in my Report for 1913. The main objects in view in 1914 have been :—

1. To secure cases as early in the disease as possible.
2. To overhaul and keep watch over "contacts."
3. To work in consultation with the general practitioners, offering them the services of the Tuberculosis Officer in all and especially in doubtful cases.
4. Bacterioscopic examination and report on specimens of sputum, etc., free to general practitioners.
5. Continuity of treatment for, and observation of, ex-Sanatorium patients.
6. Efficient "following up" by district nurses.
7. After-care committees providing extra nourishment, extra sleeping accommodation, kindly encouragement, and securing suitable occupation for ex-Sanatorium patients.
8. Increased domiciliary visiting by Tuberculosis Officer.
9. Close co-operation between Tuberculosis Officer and district Medical Officer of Health.
10. Provision of Shelters.
11. The School Medical Officer and the Tuberculosis Officer, working hand in hand, on behalf of potentially consumptive and contact children.
12. Education :—
  - (1) At the Sanatorium.
  - (2) Health talks to school children, and at meetings for mothers, by the School Medical Officer.
  - (3) Distribution of health pamphlets on leaving the Sanatorium, or through the school children.

### DISTRICT NURSES.

During 1914 an additional Association has come into the Nursing Scheme. This Association provides a nurse for the Staveley, Ings and Crook districts.

The radius of the Kirkby Lonsdale nurse has been greatly extended; her area includes practically the Lune valley from Kirkby Lonsdale to Firbank.

I wish to thank the Nurses for the tactful and kindly way in which they carried out their duties as health visitors.

During 1914 878 visits were paid by the nurses to the homes of the patients.

# THE KENDAL CHARITY ORGANISATION SOCIETY.

An After-care Committee has been formed from the above Society. This Committee has done much valuable work in 1914. I beg to thank Miss Martindale in name of the Society for much practical good done and help afforded.

Miss Martindale very kindly furnishes the following Report :—

*“ Report of Sanatorium After-care Committee (Kendal). ”*

“ The above Committee only took up systematic work in October, 1914.

“ The objects of this Committee were to visit regularly the patients returned from the Sanatorium.

“ To help in finding suitable employment.

“ To encourage the patients by friendly influence to observe the simple rules of health already learnt in the Sanatorium, *e.g.*, fresh air, clean linen, reasonable rest, etc.

“ And in cases where the doctor felt that special nourishment or treatment was needed, which the patient was unable to get, to assist in providing it.

“ Generally to keep the Medical Superintendent informed of the patient's surroundings and conditions. This is done by means of monthly reports sent through Nurse Kneale, with whom the Committee are in close touch.

“ Thirteen visitors were appointed, and during the two months November and December, 115 visits were paid.

“ In six cases extra milk was obtained for them, and in three, other forms of material help were given; employment was secured for one man, and a housewife was enabled to get assistance until able to do the work herself.

“ It is interesting to note that six returned patients have enlisted for the War and the reports received of them are excellent.”

In the following Table the number of cases of Phthisis notified from each Sanitary District (as contained in the Annual Reports of the District Medical Officers) is set out, together with a comparative statement showing the incidence of pulmonary tuberculosis in relation to population.

Sanitary. District.	Area in acres. (land & inland water)		Population.	No. persons notified.		Proportion % persons notified.		Proportion % of total population.		
URBAN.										
Ambleside	...	4,424	...	2,553	...	7	...	6.7	...	4
Appleby	...	1,876	...	1,736	...	2	...	1.9	...	2.7
Grasmere	...	7,332	...	876	...	0	...	0.0	...	1.3
Kendal	...	2,622	...	14,033	...	33	...	32.0	...	22
Kirkby Lonsdale	...	3,254	...	1,524	...	2	...	1.9	...	2.3
Shap	...	2,082	...	1,006	...	2	...	1.9	...	1.5
Windermere	...	9,907	...	5,147	...	6	...	5.8	...	8
RURAL.										
East Westmorland	183,154	...	11,151	...	8	...	7.7	...	17.5	
South Westmorland	170,810	...	19,116	...	18	...	17.4	...	30	
West Ward	119,869	...	6,433	...	25	...	24.2	...	10.1	

With regard to the West Ward figures it has to be noted that no less than 18 out of the 25 cases notified from this Rural District were notified from Glenridding and Patterdale. During 1914, at the request of Dr. Wilkins of Patterdale, the Tuberculosis Officer and the County Medical Officer made a concerted inquiry into the state of health of the miners employed at the Lead Mines, when a considerable prevalence of chronic fibroid phthisis was found.

The following is a brief statistical account of the work done in 1914 :—

#### I. INSTITUTIONAL TREATMENT.

The number of persons admitted to Meathop from 1st January, 1914, to 31st December, 1914, was 70, of whom 39 were males and 31 females. In 1913, 50 patients were admitted.

Of the 70 patients admitted during 1914, there were :—

Insured.	Dependants of Insured.	Non-insured. Non-dependants.
36	19	15

Their age-constitution was as follows :—

	Under 14.	14—20.	21—30.	31—40.	Over 40.
Insured	... 0	... 6	... 15	... 5	... 10
Dependants	... 13	... 0	... 2	... 4	... 0
Non-insured	} ... 3	... 3	... 2	... 3	... 4
Non-dependants					
Totals	... 16	... 9	... 19	... 12	... 14



## 2.—DISPENSARIES.

The following Table shows what has been done at the Dispensaries during the year 1914 :—

		No. of new Patients examined.		No. of Insured.		No. of Non- insured.		No. of examina- tions made.
Kendal	...	71	...	30	...	41	...	329
Appleby	...	21	...	12	...	9	...	39
Meathop	...	31	...	17	...	14	...	31
Totals	...	123		59		64		399

The following Table shows which Districts, in proportion to population, produced in 1914 the largest number of patients for Meathop :—

Sanitary District.	Population.	No. Cases admitted Meathop in 1914.	Proportion % total cases admitted.	Proportion % of total population.
URBAN.				
Ambleside	... 2,553	... 4	... 5.7	... 4
Appleby	... 1,736	... 3	... 4.2	... 2.7
Grasmere	... 876	... 1	... 1.4	... 1.3
Kendal	... 14,033	... 22	... 31.4*	... 22
Kirby Lonsdale	... 1,524	... 2	... 2.8	... 2.3
Shap	... 1,006	... 2	... 2.8	... 1.5
Windermere	... 5,147	... 6	... 8.5	... 8
RURAL.				
East Westmorland	11,151	... 6	... 8.5	... 17.5
South Westmorland	19,116	... 12	... 17.1	... 30
West Ward	... 6,433	... 12	... 17.1	... 10.1

\* Corrected for Kendalians only, 29.5.

## ISOLATION HOSPITAL ACCOMMODATION.

## 1. INFECTIOUS DISEASES OTHER THAN PHTHISIS AND SMALLPOX.

The total number of available beds in the County in proportion to the population is in the ratio of one bed to 594 of the population. As a rough and very general estimate it is recognised that the ratio should never be less than one bed to 1,000 of the population.

In the following Table will be found the actual figures :—

SITUATION.	TOTAL AVAILABLE BEDS.			Number of dise'ses which can be concurrently treated.
Kendal ...	32 beds	12 cots	...	4
Windermere ...	{ 13 „	2 cots	...	2
	{ 6 „	(convalescent cases)		
Ormside ..	32 „	4 cots	...	2
Kirkby Lonsdale	2 „	...	...	1
Grasmere ...	4 „	...	...	1
TOTAL BEDS (including cots)	107			

The following extracts from the District reports deal with the question of isolation hospital accommodation.

#### KIRKBY LONSDALE.

The Medical Officer of Health says : “ The Hospital accommodation for infectious diseases in the district remains the same as before. Hop House is still retained as an isolation hospital in the event of sporadic cases, whilst under our agreement with the South Westmorland Rural District Council any epidemic can be dealt with by transferring the cases at a fixed charge to the Kendal Sanatorium.”

#### WEST WARD.

I am glad the Medical Officer of Health is able to report that “ the provision of a Motor Ambulance has now been made : this is a great boon. The additional accommodation and improved attendance provided is a very pleasing feature.”

The Sanitary Inspector says :—

“ The Infectious Diseases Hospital for the district is situated at Ormside, in the Rural District of East Westmorland, and is the joint property of the East Westmorland and West Ward Rural Councils, the Borough of Appleby and the Shap Urban District Council. During the year a motor ambulance has been purchased, consequently removals now take place expeditiously. It is pleasing to note the great improvements that have taken place in

recent years for the care of persons suffering from infectious diseases at Ormside Hospital. Additional accommodation has been provided, there is now telephonic communication direct between the Hospital and the Doctor's residence at Appleby. Every case is nursed by skilled and trained nurses under Dr. de Montmorncy's supervision, and now the comparatively slow means of horse removal to hospital has been superseded by an up-to-date motor ambulance. At last Ormside Hospital is a credit to the Authorities whose property it is."

## 2. SMALL-POX HOSPITAL ACCOMMODATION.

Situation.			No. of available beds.	
Woodside, near Kendal	...	...	...	35
Ormside	...	...	...	2
				<hr/>
				37
				<hr/>

## 3. PHTHISIS ACCOMMODATION.

As already mentioned, most happily Westmorland has ample accommodation in the Westmorland Consumption Sanatorium for the treatment and segregation of early and advanced cases of Phthisis. The available accommodation is as follows :—

			Beds.
(a) In Sanatorium (for early cases)	...	...	82
(b) In Home (for advanced cases)	...	...	53
			<hr/>
			135
			<hr/>

Of these, 15 beds are leased to the County Council at the sum of £70 each, per annum; 15 additional beds are at the disposal of the County Council, for extra cases, at the rate of 30/- per week, per bed; cases over and above a total of 30, are charged £2 2s. per week.

## HOUSING.

The following Table shows what has been done in the various Districts during 1914 in regard to Housing.

### AMBLESIDE.

The Medical Officer of Health says : " There is a good supply of houses on the whole, most of them excellent, and the prospect of as many more as may be required, though the population does not look like increasing at present."



HOUSING, TOWN PLANNING, &c., ACT, 1909. SECT. 17 (1).

DISTRICT.		Number of Dwelling Houses inspected.	Number of Houses found to be unfit for Habitation.	CLOSING ORDERS.		No. of Houses in which defects were remedied without Closing Orders being made.	No. of Houses in which defects were remedied after making Closing Orders.	NO. OF HOUSES DEMOLISHED.		GENERAL CHARACTER OF DEFECTS.
				No. of Representations made to Local Authority,	No. of Closing Orders made.			Under Demolition Orders.	Voluntarily by Owner.	
URBAN.										
Ambleside	...	17	0	0	0	7	0	0	0	Defective drainage, sanitary accommodation, lighting and ventilation, floors, etc.
Appleby	...	210	0	0	0	69	0	0	0	Deficient light and ventilation, defective gullies, damp, defective ashpits, insufficient w.c. accommodation.
Grasmere	...	27	4	0	0	0	0	0	0	Damp walls; defective drainage and ventilation.
Kendal	...	106	44	24	23	19	8	6	5	Overcrowding (64% of the occupied houses inspected were overcrowded).
Kirkby Lonsdale	...	66	0	0	0	9	0	0	0	Uncleanliness and lack of ventilation.
Shap	...	8	0	0	0	7	0	0	0	
Windermere	...	52	0	0	0	21	0	0	0	Defective drainage, defective accommodation for house refuse, dampness.
RURAL.										
East Westmorland	...	91	1 (a)	0	0	22	0	0	0	Defective roofs, floors, ceilings, pavement of yards, chimney flashings, valley gutters; damp; insufficient light and ventilation; insufficient or defective water closets, privies, ashpits and drains.
South Westmorland	...	513	11	2	1	98	0	0	0	Want of air and light to rooms; damp; drain defects; closet defects and insufficiency; bad floors.
West Ward	...	503	11	0	0	129	0	0	1	Bad repair, damp walls, insufficient light and ventilation, dark and dangerous staircases, bad floors, privies adjoining dwellings, low ceilings, yards in bad order, foul and uncovered ashpits, bad drains.

† Nine of these 11 dwelling-houses were vacant when inspected and are still unoccupied.

† Nine of these 11 dwelling-houses were vacant when inspected, and are still unoccupied.





The Sanitary Inspector reports: " Out of the 113 houses which have been inspected during the past four years, there remain 18 where work required to be done, has not as yet been carried out. About one-half of these require only small sanitary improvements outside, the remainder requiring structural alterations as well.

" The above 18 houses are all occupied by good tenants, and are by no means overcrowded.

" There remain about 15 cottages in the district which might be subject to a full inspection for the purpose of Section 17, although known to be quite good dwellings, yet they are of the older type.

" During the past 12 months about ten tenants of cottages have left and about four new tenants came into the district, and at the time of writing this report seven cottages are empty which were tenanted 12 months ago."

#### " WORKMEN'S COTTAGES.

" The lease of a piece of land for a term of 999 years from the Governors of the Kelsick's School Foundation to two private individuals in Ambleside, for the purpose of erecting cottages thereon, has now been practically agreed to, and it is anticipated that at least ten cottages will be erected on the land."

#### APPLEBY.

The Medical Officer of Health says " there is not at present a great demand for working-class dwellings, so that the problems, so acute in many places, have not to be faced in this locality. Overcrowding, which existed to a small extent, has been abated for the most part."

In the same strain the Sanitary Inspector points out that " the demand for working-class dwellings has abated. By migration the overcrowding (which was not serious) has generally been overcome. The houses to inspect range from £12 to £16 per annum, and are generally considered good houses at this rental in this district."

#### GRASMERE.

In February, 1914, an Inspector of the Local Government Board held an Inquiry in regard to Housing at Grasmere. I was present in my capacity as County Medical Officer of Health.



In this district, as the Medical Officer of Health points out, "there is some overcrowding. The need for some additional houses is evident. The problem before the Council is a difficult one from many points of view, but it is hoped, with the advent of more normal times, a satisfactory solution may be found."

The Sanitary Inspector reports that though there are fewer cases of overcrowding than last year, a few cases still remain, but "these are receiving the immediate attention of the Council, and are being removed as speedily as possible."

#### KENDAL.

The following is an extract from the report of the Medical Officer of Health with regard to the Housing problem in Kendal:—

"There has been a further disappearance this year of dilapidated and insanitary houses. No less than 25 houses have been done away with or closed. Eleven new houses have been erected by private enterprise. The Council have made a beginning towards the building of the 24 houses in Two Stiles Field, which was referred to in last year's report. There have been many difficulties in the way of rapid progress towards this, but four are now approaching completion and others are well on the way. Before many months are passed, it is to be hoped that the majority of these may be ready for habitation. There is a tendency, however, amongst many still to crowd too great a number of the family into one room, although there are other rooms available. This is not due by any means to the lack of beds and bedding, which would be a certain amount of excuse. There has been very considerable attention paid to this phase of the housing question during the year. The need of an individual for a minimum cubic space, and the subject of ventilation related to it is not sufficiently recognized. To ensure proper ventilation a small cubic space requires a rapidly changing current of air, or what is ordinarily known as a draught; when this occurs the usual plan is to cut off that current of air as an inconvenience. The result is close-smelling rooms and an atmosphere that is unfit to breathe. Here we find a potent contributory cause to the production of consumption. That the majority of people do not get enough fresh air is well known by the improvement so noticeable in the complexion and general well-being of the recruits in our modern armies, who are getting more fresh air now than ever they had in their lives."

The Sanitary Inspector reports at length on what has been done in the Borough during the year, as follows:—

“ HOUSING OF THE WORKING CLASSES ACT.

“ *New Dwellings.*

“ At the Council Meeting held in January tenders amounting to £4,308 15s. 9d. for the erection of houses (24) at Two Stiles Field were accepted, and it was resolved that application be made to the Local Government Board for leave to borrow the sum of £4,737 for the acquisition of land and the erection of dwelling-houses for the working classes under Part III. of the Housing of the Working Classes Act, 1890, as amended by the Acts of 1900, 1903 and 1909 for the following periods:—

For the purchase of freehold land ...	£160	Repayable over a period of 80 years.
For the erection of dwellings ...	4309	Repayable over a period of 60 years.
For the construction of sewers ...	79	Repayable over a period of 30 years.
For the first formation of streets ...	189	Repayable over a period of 20 years.

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Total ...	£4737
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“ The sanction of the Board to borrow the above amount was received in February. About the same time the contractor for the walling withdrew his tender and the Borough Surveyor revised the specification and obtained fresh tenders. Other contractors afterwards withdrew, and finally contracts were entered into in June for the erection of 24 dwellings.

“ At the end of the year only four were approaching completion.

“ During the year 11 new houses erected by private enterprise were certified for occupation by the Borough Surveyor.

“ Below are given particulars of the old property dealt with under the Housing Acts:—

“ Six houses in Jameson's Place were closed by Order in April, 1913, and Demolition Orders were made in May, 1914. The owners appealed to the Local Government Board against the Demolition Orders. A scheme for the improvement of the area was afterwards submitted to and approved by the Health Committee.

“ During the progress of the work the enquiry into the appeal was heard by Mr. W. H. Collin, when the owners withdrew their appeal with regard to three houses and asked that the Orders with regard to the other three might be varied. Four houses were actually demolished (one of which was not condemned) and two joined on to existing cottages. When the work is completed there will be five cottages on the site where there were previously eleven.

“ Five dilapidated cottages in Captain French Lane, which were closed by Order in April, 1912, were reconstructed into two good cottages with three bedrooms each.

“ Three cottages, also in Captain French Lane, which were below street level and had low ceilings, were dealt with under Section 15 of the Housing Act and were reconstructed, the floors and ceilings being raised.

“ Three dilapidated cottages in Yard 126, Stricklandgate, which were closed by Order in April, 1913, were reconstructed, the floors and ceilings being raised to 8 feet in height, the roof re-slatted and new windows provided.

“ Two cottages, 12 and 14, Far Cross Bank W., which were closed by Order in November, 1913, had the kitchen floors lowered, the bedroom ceilings raised to 8 feet and new windows provided.

“ The four cottages in Yard 36, Highgate, which were closed by Order in November, 1911, still remain standing, but the owner was given notice in December that unless these were pulled down to such a level as to give the cottages on the opposite side of the yard an angle of light of 45 degrees, these cottages would also be condemned.

“ A back-to-back cottage in Captain French Lane was closed by Order, and as this will probably be used for trade purposes no further steps will be taken.

“ Two cottages in the Church Walk which were below ground level and had low ceilings and no through ventilation were dealt with under Section 15. These cottages were reconstructed and an obstructive building at the rear demolished, towards the cost of which the Corporation paid £10.

“ Five cottages in Redmaynes Yard, Stricklandgate, were dealt with, three under Section 15 and two by Closing Order. The three were re-roofed and new windows provided. One of the two closed by Order had the bedroom ceilings raised and new windows provided. Nothing further was done with regard to the other cottage, as the necessary alterations are still under consideration.

“ Two cottages in Yard 129, Stricklandgate, were closed by



Order. One of these was demolished and the other converted into a washhouse. A cottage in Yard 168, Kirkland, in a congested situation, was closed by Order and this has since been converted into a washhouse.

“Two cottages in Woolpack Yard were dealt with under Section 15, and as the cottages remain unoccupied no further steps will be taken.

“No. 16, Union Street, was dealt with under Section 15 and was thoroughly overhauled and repaired.

“No. 9, Bridge Street, was represented by the Medical Officer as unfit for habitation and was altered by the owners without any notice or Closing Order being issued.

“Eight dilapidated cottages in Captain French Lane were closed by Order in September. Nothing has yet been done to remedy these defects and the houses are now all occupied.

“Four cottages at the top of Old Shambles were closed by Order in October and a cottage behind them was reported by the Medical Officer as an obstructive building. The question of the obstructive building is still under consideration.

“A block of five houses in Beast Banks were represented as unfit for habitation in December and Closing Orders will be issued in due course. Many other houses with minor defects were dealt with, either under Section 15 of the Housing Act, or under the Public Health Acts. Generally speaking the defects found were dampness of walls caused by houses being below ground level, low ceilings and insufficient lighting and ventilation.

“There is still a great need for houses for the working classes, as at the end of December there were less than a dozen houses to let at rents under 4/- per week, and of these the majority were only in a passable state of repair.

“During the ten years 1905-14, 120 cottages let at rents less than 4/- per week have been demolished, converted to other purposes, or have been condemned and not put into habitable condition again. Very few cottages, if any, have been built during this period to meet the requirements of the class of tenant dispossessed.

#### “ OVERCROWDING.

“A great amount of time has been devoted to dealing with overcrowding. Most of the cases dealt with were found whilst engaged in housing inspection.

“The working classes generally do not seem to recognise that overcrowding is a danger to their health and one of the greatest allies of consumption. They are quite ready to quote instances of

certain persons who brought up large families in small cottages and conveniently forget those who unfortunately died. Even when there is plenty of bedroom accommodation some of them seem to prefer crowding into one or two rooms. Of the houses inspected under the Housing Regulations 86 were occupied, and of these 43, or just 50 per cent., were overcrowded to some extent. Out of 86 occupied houses in 1913, 64 per cent. were overcrowded, so that there is an improvement, but at the same time 50 per cent. is far too high a figure, and this might be reduced considerably by making better use of the accommodation existing. 300 cubic feet of air-space per head for each adult or child is taken as a minimum, and when the amount fell below this figure the house was said to be overcrowded.

“ Below are given particulars of the 86 houses inspected :—

	No. inspected.	No. overcrowded.
“ Houses let at 1/6 to 2/- per week...	19	9
„ 2/- to 2/6 „ ...	13	9
„ 2/6 to 3/- „ ...	23	11
„ 3/- to 4/- „ ...	25	14
„ 4/- to 5/- „ ...	5	1
„ over 5/- „ ...	1	0
	—	—
	86	43
	—	—
“ No. of one bedroomed houses overcrowded	...	5
„ two „ „	...	25
„ three „ „	...	9
„ four „ „	...	4
		—
		43
		—
“ No. of houses overcrowded in one room	...	28
„ „ two rooms	...	14
„ „ three rooms	...	1
		—
		43
		—

#### KIRKBY LONSDALE.

The Medical Officer of Health reports :—“ During the year eight new cottages were completed. These houses, in blocks of four each, and standing in their own gardens, are a useful addition to the workmen’s dwellings in the district. In the plans of all new cottage property it would be well if the provision of a

suitable food store could be insisted on; the poor are very much handicapped by having no accommodation for storage.

“A good deal of cottage property in the district has been improved in many ways as a result of the recent inspection under the Housing and Town Planning Act. At the same time there remains in Kirkby Lonsdale a large number of small cottages which are ill adapted for being houses of growing families. It seems a pity that the better houses cannot be retained for workmen who have large families. Unfortunately, as has been pointed out in previous reports, it is often the working man with a large family who is least able to pay the rent of a more commodious house.”

#### SHAP.

The Sanitary Inspector says:—“The Granite and Concrete Works have found work for a large number of men, consequently all the houses are occupied, but the number of existing houses is still adequate for the needs of the District.”

#### WINDERMERE.

The Medical Officer of Health says that the housing question in Windermere “has been practically solved by private enterprise. There is sufficient housing accommodation, and no overcrowding.”

The Sanitary Inspector reports:—

“Plans of 9 new houses, 4 alterations and additions to old houses, 1 garage, 1 stable and coach-house, 1 gymnasium, and the conversion of 1 house into 2 tenements have been approved.

“Seven houses have been completed, including 4, the plans of which were approved in 1913; and 6 houses are now in course of erection.

“All the houses completed in 1914 would ordinarily let at rents exceeding £16 per annum.

“New houses are inspected during erection and certified as fit for human habitation before occupation.

“The temporary workmen’s dwellings for the navvies employed on the sewerage and sewage disposal works have been maintained, and the accommodation provided has been more than sufficient.

“The district is essentially a residential area, abounding in large mansions and summer residences. Most of the smaller dwelling houses and cottages are modern and well built; the open



spaces are generally ample, and there is practically no overcrowding. In confirmation of this it is interesting to note, in the report of the County Medical Officer of Health for 1913, that at the 1911 Census there were only 2 tenements in the Windermere Urban District with more than 2 occupiers per room; the number of persons living in such tenements being only 18, a proportion to total population of only 0.4. The lowest proportion in the County of Westmorland and probably one of the lowest in the kingdom.

“There are approximately 1,273 houses, of which number 624 are let at rents exceeding £16 per annum.

“There are no cellar dwellings, nor have any common lodging-houses and offensive trades been established in the district.”

#### EAST WESTMORLAND.

“In Kirkby Thore and Temple Sowerby Districts,” according to the Medical Officer of Health, “there is a shortage of working-class dwellings, so that overcrowding exists. No place can be healthy where overcrowding occurs,” he adds, “and sooner or later consumption is sure to make its appearance. The abatement of this condition should be taken in hand as early as possible.”

The Sanitary Inspector, (Southern Division), says that “complaints have been received from householders at Mallerstang and Newbiggin-on-Lune of difficulty experienced by them in obtaining houses.”

The Sanitary Inspector, (Northern Division), reports that “five bad cases of overcrowding exist, all of which are in the Temple Sowerby and Kirkby Thore Districts.

“No further steps have been taken in respect of the Smithy House, Temple Sowerby. The Agent of this property has been communicated with, but no developments have taken place.

“In Kirkby Thore and Temple Sowerby Districts there is a general shortage of working-class dwellings.

“In addition to the Housing Records made during the year, I have had transferred to me from the Southern Division, 40 Housing Records relating to houses in this Division, made by Mr. Ellwood since the coming into force of the Housing Regulations. It has been my duty, during the year, to ascertain what works have been carried out in respect of these, and to report accordingly; a duty which has taken up no little time. Of 40 Records made by Mr. Ellwood, 22 are completed up to date, leaving 18 under observation.”

During August, 1914, an Inspector of the Local Government Board made an inspection into the Housing conditions of the whole District.

#### SOUTH WESTMORLAND.

As will be seen on referring to the Housing Table many houses have been inspected in this extensive and widely-scattered Rural District.

The Medical Officer of Health says that in the Rural District of South Westmorland "the supply of houses is very fair. In one or two places it would be an advantage to have some additional accommodation."

#### WEST WARD.

The Medical Officer of Health reports :—"Additional accommodation has been and is being provided in two areas, but there is evidently need for further effort in this direction. To solve the problem of housing by causing inhabitants to leave the District is hardly a correct solution. It is, however, a very difficult problem in a large rural area. Houses suitable often exist, but are too often far away from centres of occupation to be of any use. It is unfortunate that so much of the improvements scheduled by the Council to be done in connection with existing buildings, should have to remain undone owing to a shortage of labour at this particular time. More normal times may produce the remedy, but at present the only thing is to do as much as possible under the circumstances, and this is evidently being done."

In some remarks on the housing question in the District, the Sanitary Inspector who, single-handed, has inspected a large number of houses, reports :—"Although some few owners of houses have made little or no attempt to do the work required, yet on the whole owners are loyally endeavouring to comply with the requirements of the Act. The standard of efficiency aimed at by the Council's Housing Committee and the Officials, without unduly and unnecessarily harassing owners in expense, is that every house in the district should be made thoroughly fit for human habitation. Scarcity of labour, owing to the war, is responsible for the large number of cases in which the Council's requirements have not been carried out. The cottages in 16 villages in the District have been inspected and the Sanitary Inspector hopes to complete the Inspection in 1915. The Sanitary Inspector is strongly of opinion that the Local Government Board should have

laid down a standard in rural districts for existing houses as regards the minimum height of living rooms and sleeping rooms, proportion of window area to floor area, etc., instead of leaving to individual Councils the fixing of a standard. An owner of property complained that he had had notice in this district to enlarge windows which would have been passable in a neighbouring district."

#### WATER SUPPLY.

##### AMBLESIDE.

The Sanitary Inspector says that "the water supply of the District continues the same, being abundant, constant, and of excellent quality, obtained from the Scandale Beck."

##### APPLEBY.

The Sanitary Inspector reports that the water supply is supplied "by gravitation from Springs situated at Bank Wood, near Hilton." The supply is constant, pure and abundant.

##### GRASMERE.

"The water supply continues to be excellent," says the Sanitary Inspector, "all the mains are flushed weekly and the reservoir twice every year. The Council are contemplating cleaning the old mains through the village, or the laying of new ones in certain parts."

##### SHAP.

The Sanitary Inspector says that "the water supply at the South End was still not wholly satisfactory, unaccountable deficiency still occurring. However, early in December a serious wastage, amounting to over 2,000 gallons per day, was discovered at the Workhouse. Steps were at once taken for an investigation by the West Ward Guardians, and although nothing has yet been done by them we are informed that they intend to remedy all defective pipes, etc., immediately. When this is done it is confidently hoped that no further complaints as to a shortage of water supply will be received from any consumer."

##### WINDERMERE.

The Sanitary Inspector reports:—

"Although April, May, June and July were very dry months, the water supply was continuous and unrestricted throughout the year; but the rainfall in August and September was normal, and



there was an absence of visitors during those months; also arrangements had previously been made whereby the water of several springs on the lower side of the reservoir dam is now utilised.

“The Water Company have possession of the site for their new reservoir and have sunk several deep trial holes on the site of the proposed new dam.

“A corroded water main in Victoria Street and Main Road between the Station Fountain and Deason’s Carriage Works is to be re-laid with 6-inch pipes in the early part of 1915.

“The water is pure and soft.”

#### EAST WESTMORLAND.

The Medical Officer of Health says that “there have been some improvements and extensions in connection with existing supplies. There is, however, a need for provision of new water supplies for Asby, Colby, and Hoff districts, especially the latter. The problem is often a very difficult one in a large rural area with scattered houses, but if possible should be solved, in the interests of individuals and public health generally.”

The Sanitary Inspector (Southern Division) reports :—

“New supplies to houses erected during 1914, 4—Brough 4.

“New supplies to existing houses, 12—Brough 4, Mallerstang 8.

“Old supplies improved: pumps, water-taps, service pipes and mains repaired, 9—Brough Sowerby 1, Soulby 1, Tebay 1, Winton 1, Kirkby Stephen 4, Crosby Garrett 1.

“Waste of water caused by defective service pipes and taps: number of cases 5—Kirkby Stephen 4, Winton 1.

“Suspected pollution of water supplies.—Three samples of water were taken and sent for analysis.

“Two were from a well at Belah Cottages, in the Parish of Winton, (one taken after filtration). Below is extract from County Analyst’s report.

“The analyses show that the filtration produces a marked improvement in the quality of the water—the dissolved organic matter being reduced to about one half. There is nothing in the analyses to create suspicion of contamination by sewage matter, and if the source is far removed from the possibility of such contamination, the filtered water may be safely used for the supply of these cottages.”

“The other was taken from a pump at Punch Bowl Inn, North Stainmore, being suspected of metallic pollution. The following is an extract from the County Analyst’s report:

“I have tested for lead, copper, zinc and baryta, and found the water free from all of them. . . . I am of opinion that the water is free from danger by metallic contamination.”

“Mallerstang.—In June a scheme to supply water by gravitation to the Vicarage, Castle Cottages, and Old Toll Bar, in the Parish of Malerstang, was carried out.

“These houses now have an abundance of water of excellent quality.

“It is appreciated by the users, who previously obtained their supply from a small runner which was liable to pollution and failed each summer, often for months at a time.

“At the village of Outhgill, in the same Parish, the occupiers of houses and the Council School are dependent on an open stream, also liable to pollution, and on rain-water for their supply of drinking water and water for other domestic purposes.

“The cost of a supply, taken at an altitude sufficient to ensure freedom from danger of pollution, would be comparatively small.

“Waitby.—On August 22 the supply of water used by most of the occupiers of houses in the village failed. An arrangement was again made to take about 20 gallons of water each day from the Kirkby Stephen supply, as was done in September and October, 1911, and in August, 1913.

“Musgrave.—During the year no further progress has been made with regard to the supply of water for the Parish of Musgrave.

“Orton.—So far as I am aware no decision has been come to by the Parochial Committee, to whom the Council referred the matter of a supplementary supply of water for the village of Orton, as the present source appears at times to be inadequate.

“Nateby.—Although there is an abundant supply of water, the wells are at the lowest part of the village of Nateby. Most of the houses and the Council School are situate at distances varying from 100 to 330 yards, and at an altitude of from 20 to 50 feet above them.

“By means of an electrically-driven rotary pump 34 houses out of the 36 houses in the parish could have a supply of water at 60 lbs. pressure to the square inch at a comparatively small cost.”

The Sanitary Inspector (Northern Division) reports :—

“ On the whole the water supply of the district is good. Of the thirteen parishes which comprise the Northern Division, only three are without public supplies of some sort or other.

“ The Knock and Long Marton supply has been augmented and extended to Crackenthorpe during the year, and has greatly improved this portion of the district.

“ Each supply is managed by a “ Water Works Manager ” independently of this office, whose duty it is to attend to all matters relating thereto.

“ The Asby, Colby, and Hoff districts do not possess public supplies. In these districts the supplies are chiefly obtained from shallow wells.

“ At Asby the position is greatly relieved by the St. Helen’s Well, which furnishes the greater portion of the village supply.

“ The Bridge End Well at Colby has been repaired and cleansed during the year, thereby greatly improving its structural condition, and ensuring protection from surface contamination.

“ The worst conditions exist in the Hoff district. The conditions generally, of the wells, are bad, and, as I have previously reported to you, the greater portion of the inhabitants of Hoff village are obliged to use the water direct from the beck for domestic purposes.

“ Immediate improvement in this portion of the district is to be desired.

“ It is satisfactory to note, however, that in six cases in this district (i.e., Hoff) statutory notices have been served on owners of property, requiring them to provide sufficient supplies of wholesome water to their property.

“ Also that four supplies have been improved during the year.

“ Eleven informal notices have been served on owners of property, in various parts of the district, to improve their supplies. Of these eight have been complied with.

“ A sample of water was taken from the well at Mid Town Farm, Colby, and submitted to the County Analyst.

“ On his advice the well was cleansed, and the water is now considered fit for drinking purposes.”

#### SOUTH WESTMORLAND.

The Medical Officer of Health says “ there has been an improvement in the water supplies of several areas.”

The Sanitary Inspector gives the details of these improve-



ments, as follows :—“ Two improved supplies, at Low Bendrigg, Old Hutton, and Madge Ghyll, Strickland Ketel. Twenty-four new supplies at Hazelslack Tower Farm and three cottages, two houses at Leighton Beck, three houses at Keasdale Brow, Bou-skill Cottage, Throughs House, Iron House, Rock Cottage, and Thorny Hill, in Beetham; five houses at Helsington Mills; Low House, New Hutton; cottage at Millness; two houses at the Square, Milnthorpe; and Borrans Farm, Whinfell. In addition, the houses at Chapel Stile and Walthwaite have been connected to a new main laid from Megs Ghyll new reservoir.”

#### WEST WARD.

The Medical Officer of Health reports that “ there is still a good deal of difficulty in procuring adequate supplies in some parts of the district. In a widely scattered and sparsely populated rural area, the expense connected with such makes it prohibitive. A proper supply for schools, however, is very necessary. Some progress has already been made in this direction, but more is necessary.”

The Sanitary Inspector says :—

“ Most of the leaks on Barton water main have been found and remedied. The scheme is now working satisfactorily and there has been no shortage whatever, although there was a long period of drought. The scheme was undoubtedly a costly one for the small population supplied. It could not have been otherwise with so many miles of main. But water is a necessity, whatever the cost. A Barton farmer recently said that the money he spent best was the £5 or so a year which he paid in water rates and water charges and, he added, that the amount gets less every year as the loan is being paid off.

“ The inhabitants of a large number of our villages are still thirsting for water, and unless something unforeseen happens it looks as though they will have to thirst on. The Council applied to the Local Government Board for borrowing powers to carry out a scheme to supply sixteen parishes with water from Blea Water Tarn at an estimated cost of about £38,000. One of the Local Government Board's Inspectors, Dr. A. W. Brightmore, D.Sc., M.I.C.E., has held two enquiries into the subject matter of the application, one on the 21st November, 1912, and the other on 7th July, 1913. Since then at the request of the Local Government Board, the Council has advertised for tenders for carrying out the scheme and ascertained that it can be done at a cost

within £250 of the estimate; but the Local Government Board in its wisdom has not yet either sanctioned or rejected the scheme, although from a recent letter of the Board's it would seem that there are obstacles in the way. Whether the Blea Water Scheme will become an accomplished fact or it will follow in the track of the abortive Heltondale and Threaplands Ghyll Schemes remains to be seen, but whatever its fate there can be no division of opinion that a great part of the Council's district is seriously in want of pure water."

### SEWERAGE AND SEWAGE DISPOSAL.

#### AMBLESIDE.

The Medical Officer of Health says that "the new sewage works are now in full working order, and the result is good. It is highly creditable to the district that so large an undertaking has been carried through. There is ample area for dealing with all the sewage present and provision made for further extension as necessity may arise."

The Sanitary Inspector reports :—"The sewerage system of the District remains the same. The new sewage disposal scheme, described in previous reports, is now in full working order, an excellent effluent being obtained."

#### APPLEBY.

Besides altering old and making new drains at various places in the area, the Sanitary Inspector says that "two new precipitation tanks, constructed of cement concrete, have been erected at the Sewage Out-fall Works."

#### KIRKBY LONSDALE.

The Medical Officer of Health says :—"There have been no new public drains laid down during the year, and the drainage system is working satisfactorily—the clear effluent from the bacteria beds is discharged into the river."

#### KENDAL.

The Sanitary Inspector, as last year, says "the whole district is well sewered, there being only about 40 houses outside the sewerage area which discharge their sewerage on to the land or into the cesspools, which are emptied by the Council on demand."

## SHAP.

The Sanitary Inspector reports :—

“ After the extensive work in connection with the relaying of sewers carried out in 1913, it was not found necessary or desirable to carry out any further work of this nature, but an extension of the existing Church Street sewer along the back of Church Terrace is contemplated by the Council in the near future. An improvement to the settling tank at the South End sewer was carried out to the satisfaction of the County Council Rivers Inspector.”

## WINDERMERE.

As the Medical Officer of Health says, the large sewerage scheme is gradually approaching completion, and “ from a sanitary point of view there should soon be little left to be desired.”

The exhaustive report of the Sanitary Inspector, dealing with the progress of the Scheme, is as follows :—

“ The amount of work done during 1914 was as follows :— On the joint sewers 4,632 lineal yards of 18-inch glazed stoneware pipes jointed with cement and yarn, 32 lineal yards of 18-inch cast-iron pipes, jointed with molten lead at stream crossings, and 67 manholes were constructed.

“ On the Windermere Parish sewers the following lengths were constructed :—140 lineal yards of 6-inch, 2,788 lineal yards of 9-inch, and 1,728 lineal yards of 12-inch glazed stoneware pipes were laid all jointed with yarn, cement, and sand; 563 lineal yards of 8-inch cast-iron hydraulic main, and 21 lineal yards of 9-inch cast-iron pipes were laid all jointed with molten lead; also 46 manholes, 3 lampholes, and 6 hatchbox chambers were constructed.

“ This makes a total of 5.62 miles of new stoneware sewers laid, and 122 inspection chambers built in 1914. Adding these to similar works constructed during 1913, it gives a total to the end of 1914 of 7.78 miles of new sewers of every description laid, and 134 manholes and other inspection chambers built.

“ At the new Sewage Disposal Works the detritus chambers, two in number, have been built in Staffordshire brindle brickwork in cement mortar on cement concrete foundations. They have a holding capacity of 4,000 gallons. Certain valves, etc., have yet to be fixed and the coping put on. The chambers necessitated 128 cube yards of excavation, in solid rock, and contained 154



superficial yards of 9-inch reduced brickwork with various regulating valves and gauge weirs built in. Forty-five lineal yards of 6-inch cast-iron pipes were laid as sludge-emptying pipes to the pump well and as supernatant water rising main from the engine house.

“ The sedimentation tanks, three in number, constructed with cement concrete walls and floors, the latter paved with blue bricks have a total capacity of 135,000 gallons. The internal dimensions of each being 60 feet long by 20 feet wide by 6 feet average depth. They are not complete, as the walls have to be rendered, certain communicating channels have to be constructed, and the coping is not yet fixed. The tanks necessitated 475 cube yards of excavation, mostly in rock; and they contain 400 cube yards of cement concrete in battered walls and floors, 420 superficial yards of blue brick on edge paving to floors; three 9-inch floating arms to draw off the supernatant water; three 9-inch valves to draw off the sludge; and in connection with this work 32 lineal yards of 9-inch cast-iron pipes, as sludge drains to pump well, and 40 lineal yards of 15-inch cast-iron pipes, as feeds from the detritus chambers, have been laid.

“ The storm sewage tanks, two in number, built with cement concrete walls and floors, the latter paved with blue bricks, have a total capacity of 50,000 gallons. The internal dimensions of each being 45 feet long by 15 feet wide by 6 feet average depth. They are not yet completed. They necessitated 440 cube yards of excavation, mostly in good ground from the excavator's point of view. They contain 200 cube yards of cement concrete, 145 superficial yards of blue brick on edge paving to floors and each a 9-inch floating arm for draining off supernatant water and a 9-inch valve for drawing off sludge to the pump well, with 11 lineal yards of 15-inch glazed stoneware overflow pipes.

“ The filters, six in number, three on the high level and three on the low level, circular in shape, each 70 feet in diameter and of an average depth of 5 feet, have floors of cement concrete shaped to receive half channel pipes, covered with blue slotted tiles. The circular wells in the centres are built of brindle brick in cement mortar with floors to receive effluent from filters, and piers in the centres to support the bases of revolving sprinklers. The walls are built in local rubble stone flushed solid with cement mortar. The walls were built in 1913, but during 1914 the floors have been laid, containing 600 cube yards of cement concrete, 744 lineal yards of 6-inch half channel pipes and 744 lineal yards of Staffordshire brindle slotted tiles.

“ Two of the chambers to receive syphons for regulating the feed to filters have been built in brindle brickwork with all necessary valves, and one inspection chamber has been built on the effluent drains.

“ In substitution of the effluent tanks a long rectangular humus channel has been constructed, 180 feet in length by 8 feet wide and 3 feet deep; with three weir walls at intervals of 60 feet, each with a fall of 3 inches in water level. The completion of this channel has been delayed owing to the difficulty of obtaining certain ironwork. This work entailed 450 cube yards of excavation, and contains 75 cube yards of cement concrete to floors and foundations, 123 cube yards of rubble walling in cement mortar, 39 lineal yards of 15-inch glazed stoneware feed pipes and 40 lineal yards of 6-inch glazed stoneware emptying pipes to pump well.

“ The main Engine House and Office was commenced, but the walls at the end of 1914 had only been constructed to a height of 2 feet above floor level.

“ The pump well entailed 90 cube yards of excavation to a depth of 14 feet, which, from a depth of 3 feet downward, was in solid rock. The well will be circular in plan, of 10 feet diameter, and will be built in radiated blue brickwork in cement mortar.

“ The smaller engine house, to contain the engine and pump for emptying the humus channel, has been constructed of the following internal dimensions, 19 feet long by 8 feet 6 inches wide by 9 feet high to wall plates. It is built with 14-inch rubble walls in lime mortar, with Elterwater quoins and door and window openings, roofed with second quality Elterwater slates laid on matchboarding and inodorous felt and matchboarding under roof inside; with a ‘ Boyle’s ’ concealed ‘ air pump ’ ventilator fixed in the roof. Under the floor is a well 4 feet square by 9 feet deep to receive humus from the humus channels; and in connection with this work 164 lineal yards of 4-inch cast-iron pipes have been laid as a rising main to the sludge lagoons.

“ The sludge lagoons, five in number, are laid out in terraces, each lagoon being 42 feet long by 22 feet wide by 2 feet 9 inches deep, with 1 foot 6 inches difference in level between each terrace. They have cement concrete floors and sides, the latter battered. They necessitated 300 cube yards of excavation, and contain 117 cube yards of cement concrete, 51 lineal yards 9-inch glazed stoneware pipe effluent drains to pump well with five collecting chambers each 2 feet 6 inches by 2 feet, built of brindle brick in cement mortar; also 85 lineal yards of 6-inch cast-iron pipes as rising main from the engine house, delivering into 40 lineal yards of

6-inch glazed stoneware feed pipes with five valve chambers built in brindle brickwork, each 2 feet square; and two inspection chambers each 2 feet 6 inches by 2 feet, built in brindle brickwork. A considerable amount of work on this section remains to be done in 1915.

“The roads, paths, and banks have been commenced, but they are naturally the last work to be done, and not much progress will be made with them until all the underground works have been completed.

“The sewage works have been fenced off from adjoining land let to a farmer, and plans have been approved by the Council for a cottage to be erected on the estate for the accommodation of the family of the man who will have charge of the works when completed.

“The pumping station at Calgarth will be constructed during 1915.

“The dwelling huts and mission room, the latter controlled by Mr. Way, the resident missionary, have been a great source of comfort to the men employed on the works.

“The value of the work done during 1914 amounts approximately to £13,150, which, with the value of work done in 1913, brings the total expenditure to the end of 1914 to approximately £19,350.

“It is expected that a portion of the new sewage works will be in use by June, 1915.

“The pumping station at Bowness Bay has now been in use two years and 2½ months. During 1914 the pumps raised approximately 16,570,500 gallons of sewage from the Bowness low level to the high level sewer; the consumption of gas in the internal combustion engines averaging 65 cubic feet (costing 2⅔ pence) per engine per hour.”

#### EAST WESTMORLAND.

“Like the water supplies,” says the Medical Officer of Health, “this (sewerage, etc.), has been gradually increased and extended. There are, however, a few places that require attention in this respect. It is natural that at a time like the present, very little beyond urgent work should be undertaken.”

The Sanitary Inspector (Northern Division) reports as follows:—

“The following villages have public sewers and outfall discharges, viz. :—Brampton, Kirkby Thore, Long Marton, Milburn, Murton, Temple Sowerby, and Warcop.



“ These have been inspected periodically during the year.

“ A trunk sewer, septic tank, and outfall sewer have been constructed in the village of Knock during the year.

“ These are so constructed and arranged as to be capable of dealing with the whole of the sewage of the village, and at present take a considerable quantity of surface water, and the drainage from a number of houses.

“ At the instance of the Temple Sowerby Parochial Committee it is arranged that the Temple Sowerby sewers and tanks be flushed at least twice yearly.

“ This arrangement is now in vogue. The sewers were flushed and the tanks cleansed during the month of November of last year, and will be flushed and cleansed again in March this year.

“ The inspections of the several systems throughout the district have shown that, generally, they are in a satisfactory working condition. The only exception being the Long Marton sewer.

“ This sewer, as you are aware, has been the subject of some consideration during the year, consequent on a report thereon submitted by me to, and at the request of, the late Dr. Craven, with the result that an Engineer has been appointed to prepare a scheme for the effectual drainage of the village.

“ As, with the case of some of the villages, no drawings exist of the sewerage systems, the conditions of some are not fully known, “ but from a superficial inspection,” they appear to be working satisfactorily.

“ There are six villages in the district where no public sewers exist, and, with the exception of three, it may be fairly said, that as yet, no evil results have been experienced thereby (Hilton, Dufton, and Asby are the three exceptions).

“ The villages which most need attention in this respect are Dufton and Hilton, and, although no sewers exist at Asby, the condition is favoured by the position of the beck, which in ordinary times conducts away the drainage discharged therein.

“ It is not inferred, however, that this condition is satisfactory.

“ The sewerage of Asby cannot be considered satisfactory until a proper system of pipe sewers, in conjunction with suitable and efficient outfall works are provided.

“ In the villages of Dufton and Hilton the majority of the houses are without drains, or the drains are unsatisfactory by reason of their defective construction, and proximity of discharge to dwellings.”

## SOUTH WESTMORLAND.

The Sanitary Inspector gives details of the work which has been carried out during 1914, from which it appears that new drainage was laid for 18 dwelling houses, and the drainage at 47 other dwelling houses was improved.

## WEST WARD.

The Sanitary Inspector, besides detailing the various alterations which have taken place during the year, adds:—

“The only modern system of sewerage disposal yet adopted by the Council is at Pooley Bridge, though most of the villages are adequately drained and sewered. In some parts the drainage discharges into water-courses, dyke gutters and streams. Very few houses in the village of Helton have any drain and even if they had, there is no sewer or common drain to connect with, though a sewer would be of little good without a water supply to flush it with. The sewer at Newby was improved but the owner of the field into which the sewage runs is complaining of damage to the land, hence there may be trouble ahead.

“In the late autumn the Council had under consideration a complaint that the Penrith Urban Council were polluting the River Eamont by discharging into it unpurified sewage. Further down the river was a ram which raised water for domestic use to Hornby Hall in the parish of Brougham.”

## RIVERS POLLUTION PREVENTION ACT. POLLUTION OF STREAMS WITHIN THE COUNTY.

The following is a copy of the Report of Mr. Edward A. Yates, Rivers Inspector, for the year 1914:—

“February 13th, 1915.

“THE CHAIRMAN AND MEMBERS OF THE RIVERS POLLUTION  
COMMITTEE OF THE WESTMORLAND COUNTY COUNCIL.

“Gentlemen,

“I beg to hand you my annual report for the year ending February 13th, 1915.

“AMBLESIDE.

“The new sewage disposal works at Ambleside were completed and put into operation in the early part of 1914, and though some little difficulty has been experienced with the working of the filters, the effluent from them has always been both clear and bright.

“ APPLEBY.

“ The new precipitation tanks have been completed; and plans for levelling the whole of the ground, and also for draining the second half of the ground, have recently been laid before the Corporation for approval.

“ TEBAY.

“ There is little progress to report with regard to the question of the Tebay sewage; but I understand that the Engineers have submitted a scheme for the South end of the village, taking in the Station premises; and a further scheme for purifying the Mount Pleasant portion; and there would therefore appear to be no cause for delay.

“ PENRITH.

“ At the Penrith sewage works, a large additional area of land has been taken in to use for filtration purposes, and a carrier, some eight hundred yards in length, has been constructed to carry the sewage to this land.

“ KENDAL.

“ Work in connection with the extension of the existing Disposal Works at Wattsfield continues; but considering the length of time that has elapsed, very little progress has been made during the past nine months. Concrete floors and channels for the filters have been constructed; and the work of altering the septic tanks, and constructing the effluent channel, is now in hand. Seeing that almost one-half of the total sewage has still to be treated on land that has long been sewage sick, and which usually produces a very unsatisfactory effluent, and that the filter effluent, largely through lack of humus tanks, frequently contains a large amount of suspended matter, it would appear that the completion of these works is a matter that should no longer be delayed, but should be pushed on with all possible speed.

“ WINDERMERE.

“ The construction of the new disposal works at Tower Wood is well advanced, and but for wet weather and shortage of labour would, by this time, have been nearing completion; nevertheless it is expected that a portion of the works will be ready for use in the coming August.



“ CASTERTON.

“ Sub-Committees representing the various authorities concerned, met at Casterton in September, 1914, to discuss the question of the effluent from the disposal works, the main point being the excessive amount of storm water received by the works. The sill of the storm water overflow has been raised.

“ WINDERMERE LAKE.

“ During the past summer special attention has been given to the question of pollution from oil on Lake Windermere.

“ I am, Gentlemen,

“ Yours faithfully,

“ EDMUND A. YATES.”

The Sanitary Inspectors of three of the Districts touch upon the question of Rivers Pollution, as follows :—

WINDERMERE.

The Sanitary Inspector says :—

“ The disfigurement caused by persons throwing broken crockery and old cans, &c., into streams was less noticeable in 1914. It appears that many persons are unaware that it is an offence to dispose of their rubbish in that manner, and the Council have decided to print and distribute a notice as it may be found necessary.”

EAST WESTMORLAND.

According to the Sanitary Inspector (Southern Division) “ there is comparatively little pollution of rivers and streams in the district. In most cases the pollution is caused by the deposit of garden refuse, where gardens are in close proximity to the rivers and streams; and in others the deposit of tins and pots, and sometimes builders’ refuse. In two instances notice boards, prohibiting the deposit of refuse in or on the banks of rivers and streams, have been provided. The more serious pollution occurs at Tebay and Ravenstonedale, where schemes of main drainage and sewage disposal are under consideration.”

## WEST WARD.

The Sanitary Inspector of the West Ward says :—

“ No complaints were received of fresh cases of pollution of rivers and streams, and the cases to which the Rivers Pollution Committee of the County Council have previously drawn attention have been remedied, with the exception of one Township sewer, Patterdale, which also carries off the water from the County Council's own road.”

## MIDWIVES ACT, 1902.

## COUNTY OF WESTMORLAND.

## REPORT BY COUNTY MEDICAL OFFICER TO PUBLIC HEALTH COMMITTEE.

“ 19th February, 1915.

“ Gentlemen,

“ I beg herewith to submit my Report upon the qualifications and practice of the Certified Midwives practising within the Administrative County.

“ The following are the numbers on the Midwives Roll for Westmorland :—

Locality.	No. Practising.		Qualification or Status.	
Kendal ...	...	4	...	All Bona Fide.
Bridge Inn, Levens	...	1	...	„ „
Gatebeck ...	...	1	...	„ „
Kirkby Lonsdale	...	1	...	C.M.B.
Over Kellet, Carnforth	...	1	...	Bona Fide.
(Lancashire and Westmorland)				
Cautley, Sedbergh	...	1	...	L.O.S. & Edin.
(West Riding and Westmorland)				Maternity.
Underbarrow ...	...	1	...	Bona Fide.
Windermere ...	...	1	...	„ „
Bowness ...	...	1	...	„ „

“ I have visited all the above-mentioned Midwives at their homes, with the exception of the Midwife residing at Over Kellet, who was attending a case in Lancashire, nine miles distant.

“Of the 12 Midwives, 4 attend cases with a Doctor only; strictly speaking these 4 persons are not Midwives in the meaning of the Act, but they keep their names on the Midwives' Roll in case of an emergency call when a Doctor cannot be got in time.

“As regards the 2 Midwives who hold the C.M.B. and the L.O.S. Qualifications, no criticism is called for: they have a thorough grasp of modern aseptic maternity work and carry out the Rules in respect of surgical cleanliness, suitable instruments, personal clothing, &c., &c.

“Of the 10 Midwives who do not hold a qualification but who are Bona Fide, i.e., in practice before 1902, the 9 whom I interviewed may be classed as follows:—

Good	...	...	4
Fair	...	...	4
Indifferent	...	...	1

“This impression was gained after inquiring into their methods, inspecting their instruments, registers, &c. Only by personally observing their procedure while actually conducting a case could one accurately assess their value as Midwives.

“In all cases special inquiry was made into the number of visits paid during the lying-in period. The majority of the Midwives visited until the 10th day.

#### “ACTION TAKEN.

“1.—Midwives who did not visit up to the 10th day were told that the Local Supervising Authority considers visiting up to the 10th day as their minimum requirement; that all Midwives must visit up to the 10th day, it being pointed out that inasmuch as the Maternity Benefit had enabled the Midwife to secure higher fees it was only right and proper that the mother should receive increased attention. The average Kendal fee in pre-insurance days was 7s. 6d., it is now 10s.

“2.—The Midwives were instructed to keep their Registers up to date.

#### “RECOMMENDATIONS.

“That all Midwives within the County be supplied with a copy of the Rules *up to date*, with forms for notifying the Local Supervising Authority, and with a suitable pamphlet stating the requirements of the Local Supervising Authority.

“I am, Gentlemen,

“Your Obedient Servant,

“WILLIAM ELMSLIE HENDERSON.”

These recommendations have now been carried out.



**THE ADMINISTRATION OF THE SALE OF FOOD AND DRUGS  
ACTS, 1875 to 1907.**

The following is a copy of the Report by the Public Analyst on samples submitted to him during the year 1914. This Report refers to the County of Westmorland (excluding the Borough of Kendal). The taking of samples within this area is in the hands of the Police.

				Samples Analysed.
Vinegar	...	...	...	1
Milk	...	...	...	16
Pepper	...	...	...	4
Whisky	...	...	...	4
Gin	...	...	...	1
Cream of Tartar	...	...	...	1
Lard	...	...	...	2
Coffee	...	...	...	5
Cocoa	...	...	...	2
Preserved Ginger	...	...	...	1
Ground Almonds	...	...	...	1
Custard Powder	...	...	...	1
Baking Powder	...	...	...	1
Cheese	...	...	...	1
Rum	...	...	...	4
Sweetmeats	...	...	...	1
Butter	...	...	...	7
Tea	...	...	...	2
Ground Ginger	...	...	...	3
Mustard	...	...	...	1

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One sample of rum was found to be adulterated by the dilution of 16.8 per cent. below the legal limit. The vendor was fined £6 and £1 10s. costs at the Kendal County Police Court on 4th July, 1914.

The remaining samples were found, on analysis, to be genuine.

In the Borough of Kendal the taking of samples is in the hands of the Sanitary Inspector. The following Table shows what action was taken in this area during the year 1914 :—

Article	No. of Samples.	Result of Analysis.	Legal Proceedings.	Remarks.
Milk ...	One ...	Milk, fat 2.49 Non-fatty solids, 7.38	Fined £10 & 31/- costs	Second offence within a year.
Milk ...	One ...	Genuine. Milk fat, 3.02 Non-fatty solids, 8.62	... ..	
Milk ...	One ...	Milk fat, 2.41 Non-fatty solids, 9.40	Fined 10/- & 10/- costs	
Milk ...	One ...	Genuine. Milk fat, 3.52 Non-fatty solids, 8.98	... ..	
Milk ...	One ...	Milk fat, 2.59 Non-fatty solids, 8.76	Fined 42/- including costs	
Milk ...	One ...	Milk-fat, 2.80 Non-fatty solids, 8.23	Dismissed on payment of 15/- costs	
Milk ...	One ...	Milk fat, 2.70 Non-fatty solids, 9.10	None ... ..	Sample obtained small general shop. Analyst reported "Decomposition having commenced when sample reached me—not sufficiently trustworthy to be made a basis of prosecution." Vendor has discontinued sale of milk.
Milk ..	Twenty-six	Genuine ... ..	.. .	18 formal and 8 informal.
Butter ...	Nine ...	Genuine ... ..	... ..	All informal samples
Margarine	One ...	Genuine ... ..	... ..	Delivered in plain wrapper. Vendor warned.
Lard ..	One ...	Genuine ... ..	... ..	Informal sample
Rum ..	Three ...	Genuine ... ..	... ..	Formal samples
Cream of Tartar	One ...	Genuine .. ...	.. ...	Informal sample
Ground Almonds	One ...	Genuine ... ..	... ..	Informal sample

The Kendal Sanitary Inspector adds :—

“A number of informal samples were taken and tested by means of the centrifuge. By this method a rough determination of the amount of milk fat present can be arrived at. . . .

“Taking the whole of the 33 milk samples, genuine and non-genuine, the average percentages were, milk-fat 3.43, and non-fatty solids 8.84. The Sale of Milk Regulations, 1901, made by the Board of Agriculture, provide that where a sample of milk contains less than 3 per cent. of milk fat or less than 8.5 per cent. of non-fatty solids, it shall be presumed until the contrary be proved that the milk is not genuine. In the 28 samples the average amount of milk fat is 19 per cent. and the average amount of non-fatty solids is 4.3 per cent. above the minimum.

“In the 33 samples, genuine and non-genuine, the average amount of milk fat is 14 per cent. and the average amount of non-fatty solids is 4 per cent. above this minimum.”

The only action taken under the Public Health (Milk and Cream) Regulations, 1912, was in the Borough of Kendal—no samples were taken elsewhere in the County.

The following short Table shows that all the 33 samples taken in Kendal were found, on analysis, to be genuine.

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS, 1912.

1. *Milk and Cream not sold as preserved Cream.*

	Number of samples examined for the presence of a preservative.	Number in which a preservative was reported to be present.
Milk ...	33	None.
Cream ...	None	None.

No samples of cream sold as preserved cream were taken.

I have the honour to remain,

Your obedient Servant,

WILLIAM E. HENDERSON.



DEATHS IN EACH DISTRICT CLASSIFIED ACCORDING TO DISEASES.

Table A.

NAME OF DISTRICT	Enteric Fever.	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Ery ipelas	Phthisis	Tuberculous Meningitis	Other Tuberculous Diseases	Cancer, malignant disease	Rheumatic Fever	Meningitis	Organic Heart Disease.	Bronchitis.	Pneumonia (all forms)	Other diseases of Respiratory Organs	Diarrhoea and Enteritis	Appendicitis and Typhlitis	Cirrhosis of Liver	Alcoholism.	Nephritis and Bright's Disease	Puerperal Fever	Other accidents and diseases of Pregnancy and Parturition	Congenital Debility and Malformation including Premature Birth	Violent Deaths, excluding Suicide	Suicide	Other defined diseases	Diseases ill-defined or unknown	TOTALS
URBAN																															
Ambleside ...	-	-	-	-	-	-	1	-	2	-	1	3	-	-	7	1	3	1	-	1	1	-	-	-	-	1	-	-	17	1	40
Appleby ...	-	-	-	-	1	-	2	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	2	-	1	4	-	1	2	-	16
Grasmere ...	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	2	1	-	-	-	-	-	1	-	-	-	-	3	-	10	
Kendal ...	1	-	-	-	3	2	-	-	8	3	-	18	-	-	27	14	14	2	1	1	-	1	7	1	3	8	4	1	57	1	177
Kirkby Lonsdale	-	-	-	-	-	-	-	-	2	-	-	2	1	-	1	-	2	-	-	1	-	-	2	-	-	1	-	11	-	24	
Shap ...	-	-	-	-	1	-	-	-	2	-	-	1	-	-	2	1	-	-	-	-	-	-	1	-	-	-	2	-	6	-	16
Windermere ...	-	-	-	-	-	-	-	-	-	-	-	7	1	-	11	2	1	-	1	2	-	-	1	-	-	3	1	-	27	1	58
RURAL.																															
East Westmorland	-	-	-	-	5	-	-	-	3	-	-	14	-	2	26	10	5	3	1	-	1	-	6	-	1	9	3	-	49	1	139
South Westmorland	-	-	1	-	1	3	6	1	6	3	5	19	-	1	29	10	8	1	-	3	-	-	4	-	1	5	8	2	71	-	189
West Ward ..	-	-	-	-	1	-	-	-	4	-	-	13	-	1	13	7	4	1	1	-	1	-	1	1	1	3	5	2	34	-	92
TOTALS	1	-	1	-	12	5	9	1	28	6	6	79	2	4	119	47	38	8	4	8	3	1	25	2	7	34	23	7	277	4	761





Table B

NUMBER OF CASES OF INFECTIOUS DISEASE NOTIFIED IN EACH DISTRICT, AND THE NUMBER OF CASES REMOVED TO HOSPITAL.

NAME OF DISTRICT	NUMBER OF CASES NOTIFIED.												NUMBER OF CASES REMOVED TO HOSPITAL.											
	Smallpox	Poliomyelitis	Diphtheria including Mem- branous Croup	Erysipelas	Scarlet Fever	Ophthalmia Neonatorum	Enteric Fever	Relapsing Fever	Cerebro-spinal Fever	Puerperal Fever	Phthisis	Other Forms of Tuberculosis	Smallpox	Poliomyelitis	Diphtheria including Mem- branous Croup	Erysipelas	Scarlet Fever	Enteric Fever	Relapsing Fever	Cerebro-spinal Fever	Puerperal Fever	Phthisis	Other forms of Tuberculosis.	
URBAN																								
Ambleside ...	-	-	2	2	3	-	2	-	-	-	7	1	-	-	2	-	2	-	-	-	-	3	-	
Appleby ...	-	-	5	-	20	-	-	-	-	-	2	-	-	-	5	-	19	-	-	-	-	2	-	
Grasmere ..	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Kendal ...	-	-	10	21	18	2	6	-	-	1	33	3	-	-	9	-	14	5	-	-	-	14	-	
Kirkby Lonsdale	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	
Shap ...	-	-	6	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	-	-	-	1	-	
Windermere ...	-	-	8	-	1	-	-	-	-	-	6	-	-	-	6	-	1	-	-	-	-	6	-	
RURAL.																								
East Westmorland	-	-	5	5	43	1	3	-	-	1	8	2	-	-	4	-	33	-	-	-	-	6	-	
South Westmorland	-	1	44	13	34	1	2	-	-	-	18	2	-	-	38	2	22	2	-	-	-	7	1	
West Ward ...	-	-	12	2	2	-	1	-	-	1	25	1	-	-	7	-	2	-	-	-	-	12	-	
TOTALS	-	1	93	44	121	4	15	-	-	3	103	9	-	-	74	2	93	7	-	-	-	52	1	















